

## **MARK SCHEME for the October/November 2008 question paper**

### **0654 CO-ORDINATED SCIENCES**

**0654/05**

Paper 5 (Practical), maximum raw mark 45

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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- 1 (a) (i) temperature/amount of water; [1]
- (ii) **A** should be tallest and straight;  
**B** should be shorter and straight;  
**C** should be curved;  
(subtract 1 mark for drawings of poor quality) [3]
- (iii) line of table should be filled in  
yellow, green, green; [1]
- (iv) values should be as follows:  
**A** should be largest number;  
**B** should be second;  
**C** should be third; [3]
- (v) magnification =  $\frac{\text{size of image}}{\text{size of object}}$ ;  
substitution of candidates values;  
answer; [3]
- (b) box **A**, plant grows upwards more quickly/etiolation to reach light (for photosynthesis);  
box **C**, plant bends towards the light/phototropism, to improve light capture (for  
photosynthesis); [2]
- (c) set up two boxes as in box **B**;  
put a red filter across top of one and a green filter across the other;  
compare growth after a few days;  
all other conditions identical/one controlled condition named; [2 max]
- [Total: 15]**
- 2 (a) value of **E** correct. *Do not allow if clearly not mm*  
*allow if values are reversed* [1]
- (c) **FOUR** complete sets of readings i.e. for 20 oscillations  
suitable range of masses  
T correct *must have at least 3 readings of 20 osc*  
T<sup>2</sup> correct to 2 dp [4]
- (e) axes correct and labelled with units  
*no marks for graph if wrong things plotted*  
scale is sensible  
plotting correct  
best straight line for their points and is reasonable st. line [4]
- (f) gradient is shown on graph for any reasonable st.line  
correctly calculated  
*if line is made up of parts, NO marks for (f)*  
*allow if area involving the plots is used* [2]

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(g) correctly calculated for candidate's figures  
accuracy – between 8 and 10  
*do not allow this mark if st.line mark not given* [2]

(h) any reasonable answer – one mark for each  
*allow 'repeating more times'* [2]

**[Total: 15]**

3 (a) (i) white ppt *Do not allow 'milky'* [1]

(ii) fizzes  
pops  
hydrogen *only if 'pops' is given* [3]

(iii) effervescence/bubbles OR Mg disappears [1]  
it is an acid  
contains sulfate  
*allow one if sulfuric acid* [2]

(b) addition of sodium hydroxide allow  $\text{Na}_2\text{CO}_3$  or aq  $\text{NH}_3$   
red brown ppt  
iron(III) [3]

(c) (i) decolourised/loses its colour/goes white [1]

(ii) white ppt  
dissolves in the acid [2]

(iii) dirty green ppt [1]

(d) the iron(III) has been changed to iron(II) OR the iron has been reduced OR WTTE [1]

**[Total: 15]**